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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,799	10/03/2003	Tobias Gerlach	KOA 0242 PUS (R 1415)	3893
22045	7590	11/30/2004	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			WEST, JEFFREY R	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

10/678,799

Applicant(s)

GERLACH, TOBIAS

Examiner

Jeffrey R. West

Art Unit

2857

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 12 November 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☐ The period for reply expires \_\_\_\_\_ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: \_\_\_\_\_

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Applicant indicates that "[t]he claimed invention as recited in amended independent claim 1 and 11 generally differs from any combination of Matsumoto, Falk, and Kane in that the claimed invention a frequency spectral result of the current ripples contained in an armature current signal is determined from differences between (i) a frequency spectral result of the armature current signal of the motor in which the current signal contains current ripples and interference and (ii) a frequency spectral result of a voltage signal of the motor in which the voltage signal contains the interference such that the determined frequency spectral result of the current ripples contained in the armature current signal is void of frequency components which are superimposed on the current signal as the interference."

Applicant argues that "Falk discloses that the voltage signal (uB) containing the interference is essentially obtained from a monitored current (i) of a current to be monitored (see col. 3, lines 1021 of Falk); and the voltage signal (uB) is subtracted from a current signal (ui) that is the derivative of the monitored current (i) (see col. 3, lines 22-44 of Falk) to produce a 'resultant superimposed signal, i.e. the useful signal' (see col. 3, lines 45-66 of Falk). The Applicant notes that it is not clear as to how Falk subtracts voltage and current signals from one another as posited by the Examiner as such signals are defined in different types of units (e.g., volts and amperes)."

The Examiner first asserts that Applicant admits that Falk discloses subtracting the voltage and current signals from one another and therefore meets the limitation with respect to this operation regardless of the units.

The Examiner further asserts that it is possible to subtract voltage and current signals from each other irrespective of units. Such operation of Falk is consistent with the operation described in the instant application on page 7, line 17 to page 8, line 7, which states:

"The superimposed oscillations in the armature current signal I, for example those of the ripple content in the electrical system, are also apparent in the motor voltage signal U. The current ripples contained in the armature current signal I are not typically contained in the motor voltage signal U and if they are contained in the motor voltage signal U they are much more attenuated.

These relationships are used to determine the current ripple frequency. To accomplish this, the motor voltage signal U is transformed into the frequency domain by a fast Fourier transform, for example, so that a spectral analysis can be performed. A corresponding transform is also performed of the armature current signal I into the frequency domain. The two frequency spectra of the motor voltage and motor current signals are respectively plotted in FIGS. 1B and 1C.

The two frequency spectra reflect the oscillation frequencies involved in bringing about the respective signal curves U and I. Subtracting these two frequency spectra from one another eliminates the interference contained in the two frequency spectra so that the result retains the current ripple frequency, which is what is decisive in the armature current signal I."

Applicant also argues that "the claimed invention differs from Falk in that in the claimed invention characteristics of two signals (e.g., the armature current signal and a voltage signal of the motor) based on two different things (e.g., the armature current and a voltage of the motor) are compared to one another whereas in Falk characteristics of two signals (e.g., the voltage signal (uB) and the derivative current signal (ui)) based on the same thing (e.g., the monitored current (i)) are compared to one another. As such, modifying Matsumoto to include means for removing interference from the armature current signal using a voltage signal that contains the interference as taught by Falk does not result in the claimed invention because such a modification would essentially include using a voltage signal that is based on the armature current signal. That is, the modification of Matsumoto as suggested by Falk would result in removing interference from the armature current signal using some form of the armature current signal itself (i.e., using a voltage signal which is based on the armature current signal). In contrast, the claimed invention removes interference from the armature current signal using a voltage signal of the motor."

The Examiner asserts that the invention as claimed only requires that the armature current signal be "an armature current signal of the motor" and that the voltage signal be "a voltage signal of the motor". Therefore, if Applicant's interpretation is correct that "the modification of Matsumoto as suggested by Falk would result in removing interference from the armature current signal using some form of the armature current signal itself (i.e., using a voltage signal which is based on the armature current signal)", the combination meets the invention of claimed since the armature current signal and voltage signal based on the armature current signal would both be "of the motor".